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Sridhar Gollamudi

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04/12/2006

Docket Administrator (Room 3J-219)

Lucent Technologies Inc.

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EXAMINER

DYKE, KERRI M

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

J

## Office Action Summary

Application No.

10/033,339

Applicant(s)

GOLLAMUDI ET AL.

Examiner

Kerri M. Dyke

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7,10,11 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 3,5,6,8,9 and 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION*****Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7, 10, 11, 14, 15, 17, and 18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7, 10, 11, and 15-18 of copending Application No. 10/033,338 in view of Razavilar et al. (US 2003/0104831). Claim 1 of the copending application includes the additional limitation of “multiple spreading codes.” First, the additional limitation is located in the preamble and thus does not carry patentable weight. Second, it would have been obvious to one of ordinary skill to use multiple spreading codes because doing so allows for a wider range of admissible rates, as taught in paragraph 72 of Razavilar. The remaining claims are exact copies of one another.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Art Unit: 2616

3. Claims 1, 2, 4, 10, 11, 15, and 16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5-7, 9-11, 16, and 17 of U.S. Patent No. 6,915,477. Claim 5 of the patent includes additional language that indicates the channel condition threshold is adjusted based upon a packet category in addition to the error detection results. One of ordinary skill would have recognized that voice packets are more tolerable to errors but less tolerable to delay than data packets. It would have been obvious to one of ordinary skill in the art to adjust the thresholds differently depending on the type of packet because of the different requirements and tolerances. Claims 6, 7, 9, 10, and 11 of the patent correspond to claims 2, 4, 10, 15, and 16 of the instant application, respectively. Claims 16 and 17 of the patent both correspond to claim 11 of the instant application. Claim 16 states the threshold is adjusted up if an error is detected (and inherently, the threshold is adjusted down in the opposite situation, i.e. not error is detected). Claim 17 states the threshold is adjusted down if no error is detected (and inherently, the threshold is adjusted up in the opposite situation). Claim 11 explicitly states that the threshold is adjusted up if there is an error and adjusted down if there is no error.

#### ***Specification***

4. The specification is objected to because of the following informalities: The blank spaces in the related applications section should be removed and the serial/patent numbers of the related applications should be inserted. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2616

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4, 10, 15, 16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Razavilar (US 2003/0104831).

7. In regards to claim 1, Razavilar discloses an adaptive quality control loop for rate adaptation comprising in the step of: adjusting a first channel condition threshold based on a first error detection result for a first data packet transmission between a transmitter and a receiver using a first variable step, wherein the first channel condition threshold is associated with a first modulation and coding scheme (MCS) level used in the first data packet transmission (paragraphs 44 and 45 and figure 4 especially step 412; Paragraph 72 states that the transmission rates are a function of the MCS (BPSK, QPSK, etc.). Paragraph 73 states that the target channel condition metrics are chosen such that a bit stream sent at a specific rate will be received correctly. Therefore the metrics are chosen in association with the MCS being used; Paragraph 69 indicates that the adjustment step size is variable depending upon the number of errors present.).

8. In regards to claim 2, Razavilar discloses the adaptive quality control loop of claim 1, wherein the step of adjusting the first channel condition threshold comprises the step of: determining the first variable step using a desired MCS error rate for the first MCS level (As described above, paragraphs 72 and 73 disclose how each channel is associated with an MCS level. Paragraph 69 describes the method for determining the variable step size based upon the

number of CRC errors in each channel. It is inherent that there must be a desired error rate against which to compare the achieved error rate in order to determine the step size.).

9. In regards to claim 4, Razavilar discloses the adaptive quality control loop of claim 2, wherein the desired MCS error rate for the first MCS level is based on a block error rate target criterion (CRC is a method used for detecting and correcting block errors and therefore the MCS level must be based upon a block error rate.).

10. In regards to claim 10, Razavilar discloses the adaptive quality control loop of claim 1, wherein the step of adjusting the first channel condition threshold comprises the step of: determining the first variable step using a block or bit error rate target criterion and a first data rate associated with the first MCS level (As described above, paragraphs 72 and 73 disclose how each channel is associated with an MCS level. Paragraph 69 describes the method for determining the variable step size based upon the number of CRC errors in each channel. It is inherent that there must be a desired error rate against which to compare the achieved error rate in order to determine the step size. CRC is a method used for detecting and correcting block errors and therefore the MCS level must be based upon a block error rate. Paragraphs 77 and 79 indicate that the step size must take into account the maximum and minimum rates.).

11. In regards to claim 15, Razavilar discloses the adaptive quality control loop of claim 1 comprising the additional steps of: adjusting a second channel condition threshold based on a second error detection result for a second data packet transmission using a second variable step, wherein the second first channel condition threshold is associated with a second MCS level used in the second data packet transmission (Paragraph 49 discloses that each terminal may use a

Art Unit: 2616

different bit rate/MCS; Paragraphs 59-60 indicate that separate processing is completed in parallel for each received signal.).

12. In regards to claim 16, Razavilar discloses the adaptive quality control loop of claim 15, wherein the first variable step is based on the first error detection result and the second variable step is based on the second error detection result (Paragraph 56 indicates that error detection is performed for each signal. Paragraph 59 indicates that target channel condition metrics are adjusted based upon the error detection results.).

13. In regards to claim 19, Razavilar discloses the adaptive quality control loop of claim 1, wherein the step of adjusting the first channel condition threshold is performed at the receiver (Figures 4 and 6 clearly show that the signal is received by the receiver where a new threshold is calculated and implemented. The new threshold is communicated to the transmitter through a feedback loop.).

### ***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al further in view of Sindhushayana et al (US Pub. 2004/0202196).

Art Unit: 2616

16. In regards to claim 7, Razavilar discloses the adaptative quality control loop of claim 2, but not wherein the desired MCS error rate of the first MCS level is based on a bit error rate target criterion.

Sindhushayana teaches the desired MCS error rate for a certain MCS level is based on a packet error rate (i.e. PER) target criterion (Fig. 3; paragraphs 41-45 and 47).

It would have been obvious to one of ordinary skill in the art to modify Razavilar's control loop with Sindhushayana's bit error rate target criterion because doing so helps to maximize throughput, as disclosed by Sindhushayana in paragraph 22.

17. In regards to claim 20, Razavilar discloses the adaptive quality control loop of claim 1, but not wherein the step of adjusting the first channel condition threshold is performed at the transmitter.

Sindhushayana discloses the adaptation taking place at the transmitter (MS) in figure 6.

It would have been obvious to one of ordinary skill in the art to modify Razavilar's adaptation in order to take place in the transmitter, as taught by Sindhushayana, because placing the necessary hardware within the transmitter allows the receiver, (which may be mobile, as taught by Sindhushayana), to be lighter and more easily portable, which is a benefit that would have been readily recognized by one of ordinary skill in the art.

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al further in view of Engstrom et al (US Patent 6,639,934).

19. In regards to claim 11, Razavilar discloses the adaptive quality control loop of claim 1, but not wherein the first variable step is associated with a first variable up step and a first



Art Unit: 2616

variable down step, the first channel condition threshold being increased an amount based on the first variable up step if the first error detection result indicates the first data transmission was unsuccessful, the first channel condition threshold being decreased an amount based on the first variable down step if the first error detection result indicates the first data transmission was successful.

Engstrom teaches an adaptive quality control loop wherein if the frame error detector 302 determines that a frame error has occurred, the proposed channel condition threshold adjustment value is increased by  $K$  times  $\delta$  and if the frame error detector 302 determines that a frame error has not occurred, the proposed channel condition threshold adjustment value is decreased to  $-\delta$  (Fig. 7; Col. 6, Lines 38-48).

It would have been obvious to one of ordinary skill in the art to combine the teaching of Razavilar with Engstrom in order to increase the adaptation rate of an outer power control loop without the risk of unbounded oscillations in the SIR target due to transmitter power limitations (Col. 3, Lines 4-7).

20. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar et al, and further in view of Shibutani.

21. In regards to claim 17, Razavilar discloses the adaptive quality control loop of claim 1, but not comprising the additional steps of: selecting a second MCS level based on an estimation of channel condition between the receiver and transmitter using a table having the adjusted first channel condition threshold.

Art Unit: 2616

Shibutani teaches selecting MCS levels based on the corresponding adjusted channel conditions (table 2; Pg. 5, Par. 50).

It would have been obvious to one of ordinary skill in the art to combine the teaching of Shibutani with Razavilar et al in order to convert the received channel condition information into a data rate (Pg. 5, Par. 50).

22. In regards to claim 18, Razavilar and Shibutani disclose the adaptive quality control loop of claim 17 comprising the additional steps of: transmitting a second data packet using the second MCS level. Shibutani teaches transmitting different data packets using different MCS levels based on the channel condition information (Pg. 5, Par. 50).

***Allowable Subject Matter***

23. Claims 3, 5, 6, 8, 9, and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter:

- a. In regards to claim 3, the prior art does not teach or suggest updating the MCs probabilities based upon the first error detection result or determining a ration between the variable up step and down step based upon the probabilities.
- b. In regards to claims 5 and 8, the prior art does not teach or suggest basing the MCS error rate for the first level upon the probabilities and error rates for the other MCS levels.
- c. Claims 6 and 9 depend from claim 5 and also present equations not taught or suggested by the prior art.

Art Unit: 2616

- d. In regards to claim 12, the prior art does not teach or suggest the ratio of up step to down step.
- e. Claims 13 and 14 depend from claim 12. In regards to claim 13, the prior art does not teach or suggest the set of equations for determining the up and down steps. In regards to claim 14, the prior art does not teach or suggest the ration of up to down step being based on the MCS desired error rate for the first MCS level.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kmd



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